

LISTING OF THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

1 (currently amended): A high-strength hot-rolled steel sheet excellent in hole expandability and ductility, consisting essentially of, in terms of a mass%:

C : 0.01 to 0.09%,
Si : ~~1.0~~ 1.2 to 1.5%,
Mn : 0.5 to 3.2%,
Al : 0.003 to 1.5%,
P : 0.03% or below,
S : 0.005% or below,
Ti : 0.10 to 0.25%,
Nb : 0.01 to 0.05%, and

the balance being iron and unavoidable impurities; wherein Mg content of the steel of said steel sheet contains substantially no Mg is limited to less than 0.0005% and satisfying all of the following formulas <1> to <3>:

$$0.9 \leq 48/12 \times C/Ti < 1.7 \quad \dots \quad <1>$$

$$50,227 \times C - 4,479 \times Mn > -9,860 \quad \dots \quad <2>$$

$$811 \times C + 135 \times Mn + 602 \times Ti + 794 \times Nb > 465$$

... <3>, and

having strength of at least 980 N/mm².

2 (currently amended): A high-strength hot-rolled steel sheet excellent in hole expandability and ductility, consisting essentially of, in terms of a mass%:

C : 0.01 to 0.09%,
Si : ~~1.0~~ 1.2 to 1.5%,

Mn : 0.5 to 3.2%,
Al : 0.003 to 1.5%,
P : 0.03% or below,
S : 0.005% or below,
Ti : 0.10 to 0.25%,
Nb : 0.01 to 0.05%,

at least one of

Mo : 0.05 to 0.40% and V:0.001 to 0.10%, and

the balance being iron and unavoidable impurities; wherein Mg content of the steel of said steel sheet contains substantially no Mg is limited to less than 0.0005%
and satisfying all of the following formulas <1>' to <3>':

$$0.9 \leq 48/12 \times C/Ti < 1.7 \quad \dots <1>'$$

$$50,227 \times C - 4,479 \times (Mn + 0.57 \times Mo + 1.08 \times V) >$$

$$-9,860 \quad \dots <2>'$$

$$811 \times C + 135 \times (Mn + 0.57 \times Mo + 1.08 \times V) + 602 \times Ti + 794 \times Nb >$$

$$465 \quad \dots <3>', and$$

having strength of at least 980 N/mm².

3 (previously presented): A high-strength hot-rolled steel sheet excellent in hole expandability and ductility according to claim 1 which further contains, in terms of mass%, 0.0005 to 0.01% of at least one of Ca, Zr and REM.

4 (canceled).

5 (previously presented): A high-strength hot-rolled steel sheet excellent in hole expandability and ductility according to any of claims 1 to 3, which further contains, in terms of mass%, at least one of:

Cu : 0.1 to 1.5% and

Ni : 0.1 to 1.0%.

6 (withdrawn): A production method of a high strength hot rolled steel sheet excellent in hole expandability and ductility according to claim 1, comprising the steps of:
finishing hot rolling by setting a rolling end temperature to from an Ar_3 transformation point to 950°C;
cooling a hot rolled steel sheet to 650 to 800°C at a cooling rate of at least 20°C/sec;
air cooling then the steel sheet for 0.5 to 15 seconds;
further cooling the steel sheet to 300 to 600°C at a cooling rate of at least 20°C/sec; and
coiling the steel sheet.